

ICS 27.120
CCS F 04



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 4960.5-2025

Replacing GB/T 4960.5-1996

**Glossary of nuclear science and technology - Part 5: Radiation
protection and safety of radiation sources**

核科学技术术语 第5部分：辐射防护与辐射源安全

(English Translation)

Issued on: October 5, 2025

Implemented on: May 1, 2026

Issued by: State Administration for Market Regulation

Table of Contents

Preface
Introduction
1 Scope
2 Normative References
3 General Terminology
4 Radiation and Sources
5 Radiation Quantity and Units
6 Protection against planned exposure
7 Protection against emergency and existing radiation exposure
8 Source security
9 Radiation Protection Equipment and Methods
10 Radiation monitoring
11 Biological effects of radiation
12 Radiation Protection and Safety Management
Index

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 5 of GB/T 4960, "Nuclear Science and Technology Terminology". GB/T 4960 has already published the following parts.

- Part 1: Nuclear Physics and Nuclear Chemistry;
- Part 2: Fission Reactors;
- Part 3: Nuclear Fuel and the Nuclear Fuel Cycle;
- Part 4: Radionuclides;
- Part 5: Radiation Protection and Radiation Source Safety;
- Part 6: Nuclear Instrumentation;
- Part 7: Nuclear Material Control and Safeguards;

---Part 8: Radioactive Waste Management;

---Part 9: Magnetic Confinement Fusion.

This document replaces GB/T 4960.5-1996 "Nuclear Science and Technology Terminology. Radiation Protection and Radiation Source Safety", and is consistent with GB/T 4960.5-Compared to 1996, aside from structural adjustments and editorial changes, the main technical changes are as follows.

The following terms have been removed. radioactivity, radioactive decay, radioactive half-life, decay chain, radionuclides, ionization events, energy deposition events, and radon.

Nuclear energy source, initial nuclear radiation, quality, radioactive waste, simulated source, high-energy radiotherapy machine, nuclear fuel cycle, uranium and thorium mining and metallurgical facilities, nuclear facilities Facilities, radioactive waste management facilities, radioactive material treatment facilities, equivalent dose burden, effective dose burden, collective equivalent dose burden, collective Effective dose burden, incomplete collective dose burden, annual dose, dose albedo, exposure dose, exposure rate, particle number density, particle flux density Degree, particle fluence, (particle) fluence rate, particle radiance, energy fluence rate, energy radiance, energy consumption per ion pair formed in a gas.

Average energy, monthly working level, becquerel, radiation level, the principle of reasonably achievable minimum, cost-effectiveness analysis, cost-benefit analysis.

Benefit difference analysis, basic limits, secondary limits, derived limits, operational limits, guidance level, reference level, record level, survey level, negligible limits Low dose, radiation work, low-dose exposure, normal exposure, planned special exposure, personal exposure, source-related exposure, critical transfer pathway Radiation protection survey, radiation protection assessment, subcritical limits, decommissioning, non-residential areas, abnormal exposure conditions, accidents, excessive exposure, accident radiation Radiation, chronic exposure, protective measures, protective actions, remedial actions, intervention level, stable iodine, concealment, evacuation, relocation, re-entry, prevention Protective equipment, geometric attenuation, thick shielding, simulation test, cold test, hot test, sampling, dosimetry, dosimeter, biological sample analysis Analysis, whole-body counter, radiation monitor, ground pollution monitor, survey instrument, gamma alarm, counting geometry (conditions), lung model, gastrointestinal model Type, bone model, ICRU ball, change, injury, damage, initial reaction period, false healing period, critical period, tissue at risk, absorption, amount of absorption, body load Lung (clearance) classification, radiation epidemiology survey, genetically significant dose, nonspecific lifespan shortening, tiered medical system, regulatory agency Structure, intervention organization, qualified expert, legal person, license, applicant, license holder, registrant, notification, approval, registration, certification, security audit Terms and definitions related to environmental impact assessment, radioactive waste management, etc. (see sections 2.1-2.5, 2.8, 2.9,

3.4, 3.7, and 3.11 of the 1996 edition).

3.20, 3.25, 3.27, 3.29~3.33, 4.8, 4.9, 4.13~4.15, 4.19, 4.28~4.30, 4.35~4.39, 4.41, 4.42, 4.49, 4.58 4.59, 4.62, 5.2, 5.5, 5.6, 5.8, 5.9, 5.11, 5.15~5.19, 5.21, 5.22, 5.27, 5.30~5.33, 5.36, 5.42, 5.43, 6.9 June 18, June 22, July 1, July 2, July 6, July 8, July 11~July 14, July 17, July 26~July 30, August 1, August 9, August 16, August 29~August 31, September 20, September 26, September 27 9.32~9.37, 9.41, 9.54~9.57, 10.10~10.12, 10.18~10.20, 10.27, 10.31, 10.33, 10.35, 10.45, 10.46 10.49, 10.50, 10.53, 11.1, 11.2, 11.4~11.13, 11.16~11.18).

The following information has been added. radioactive materials, naturally occurring radioactive materials, cumulative dose, planned exposure (situation), representative, current exposure (situation), and emergency response.

Regular safety reviews, operational status, normal operation, anticipated operational events, operating limits and conditions, accident conditions, hypothetical initiating events, and design.

Design datum incidents, design datum accidents, beyond-design datum incidents, external events to design datum, natural events to design datum, human-caused events to design datum, design Extended operating conditions, deterministic safety analysis, probabilistic safety analysis, shielding factor, human digestive tract model, human respiratory tract model, retention share.

Terminology and definitions related to discharge ratio, lens dosimeter, in vivo radioactivity measurement, ex vivo radioactivity measurement, surface contamination monitoring instrument, exclusion, and emission.

Meaning (see 3.14, 3.15, 5.32, 6.1, 6.16, 7.1, 7.12, 8.3~8.18, 9.10, 10.18~10.21, 10.30, 10.33~10.35, 12.1, 12.7).

Changes were made to ionizing radiation, protection, (radiation) source, radiation exposure, irradiation, radioactive contamination, legitimacy, radiation protection optimization, and public...

Public, radiation workers, hazards, risks, strong penetrating radiation, weak penetrating radiation, radioactive fallout, effluent, sealed source, unsealed source, irradiation Device, radiation weighting factor, quality factor, medical irradiation, public irradiation, dose constraint, irradiation route, intake, food chain pathway, alpha potential, acute Sexual exposure, emergency response plans, emergency response levels, drills, design basis accidents, fail-safety, (nuclear) criticality safety, nuclear accidents, fume hoods, gloves Boxes, robotic arms, shielded work boxes, decontamination, routine monitoring, special monitoring, radiation environment monitoring, (work) site monitoring, mission-related monitoring, detection Limits of measurement, calibration, radon chamber, relative bioefficacy, linear no-threshold model, deterministic effects, somatic effects,

radiation-induced combined injury, biological half-expiration period, health monitoring Terms and definitions such as nursing care, medical follow-up, exemption, and emission control values (see 3.1-3.8, 3.12, 3.13, 3.16, 3.17, 4.5, 4.6, 4.12-4.19) 5.25, 5.37, 6.3, 6.4, 6.5, 6.9, 6.11, 6.17, 7.3, 7.6, 7.10, 7.13, 7.16, 8.24, 8.25, 8.26, 9.3, 9.4, 9.5, 9.7, 9.24 10.2, 10.4, 10.5, 10.7, 10.9, 10.37, 10.44, 10.46, 11.1, 11.2, 11.3, 11.5, 11.12, 11.29, 11.33, 11.34, 12.2 12.8, 1996 edition of 2.10, 2.16, 3.14, 2.12, 2.12, 3.19, 5.1, 5.3, 5.24, 5.23, 10.13, 10.14, 3.9, 3.10, 3.17, 3.18, 3.21, 3.22, 4.18, 4.4, 4.12, 5.28, 5.26, 5.4, 5.34, 9.17, 5.39, 3.5, 7.10, 7.20, 7.17, 7.24, 6.16, 6.5, 6.6 7.3, 8.4, 8.5, 8.6, 8.7, 8.25, 9.7, 9.8, 9.2, 9.4, 9.6, 9.39, 9.47, 9.49, 10.1, 10.3, 10.5, 10.6, 10.22, 10.43 10.51, 10.52, 11.14, 5.40).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Nuclear Energy Standardization Technical Committee (SAC/TC58).

Introduction

Terminology is the foundation of standardization in a field. To standardize and unify the extensive terminology in the field of nuclear science and technology, and to improve communication...

To ensure accuracy and efficiency, my country has formulated and released GB/T 4960 "Nuclear Science and Technology Terminology", which is planned to consist of nine parts.

---Part 1: Nuclear Physics and Nuclear Chemistry. The purpose is to define the terminology and definitions in nuclear physics and nuclear chemistry.

---Part 2: Fission Reactors. The purpose is to define the terminology related to the design, commissioning, operation, and safety of nuclear fission reactors.

definition.

---Part 3: Nuclear Fuel and the Nuclear Fuel Cycle. The purpose is to define aspects such as uranium mining and metallurgy, uranium conversion, and fuel element design and manufacturing.

Terms and definitions.

---Part 4: Radionuclides. The purpose is to define radionuclides and their applications in agriculture, industry, medicine, and other fields.

Language and definition.

---Part 5: Radiation Protection and Radiation Source Safety. The purpose is to define the terminology related to radiation protection and radiation source safety.

definition.